Safety Pays on Winter Days!

TIRE CHAINS SAFETY

TIRE CHAIN SAFETY

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OUTLINE

1. Step by Step, How to (Hang Iron) install Tire Chains
2. FAQ's for Safe Tire Chains Use
3. Rules for Using Tire Chains
4. Siping

Steps for Hanging Iron

Safety Pays on Winter

Slip sliiidin' away…

Somewhere along the road slush turns to hard sn and you're g

been sitten in trunk for lo these many months. You'll be glad to have a good pair of gloves with you, because bare flesh on freezing metal is not a happy combination. Fortunately, just a few minutes out in the cold will soon put you on your way again., this time safely. Besides, who want to pay some one 50 Euros just to

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Before you begin

You'll need six to ten feet of clearance in either the front or the rear of your car. This will give you the space to maneuver your car onto the chains. If you're out on the road, find a level, straight stretch over on the shoulder. Be sure that oncoming motorists will be able to see you and your car in plenty of time to stay out of your way.

in the (lucky you) down or shovel snow as that your car can easily roll

If you are still driveway pack the

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Let us digress for a minute

The decision with the greatest risk regarding snow chains, will be where you will stop to put your chains on and take them off your of vehicle.

- Autobahn in the lane of travel.
- On a curve.
- In a tunnel.
- Any location that is in the lane of travel or has limited visibility.

- Autobahn on the shoulder.
- Off ramp shoulder.
- Any shoulder area with passing and head on traffic.
- Any location off the lane of travel but has moving vehicles passing you in either

- Driveway.
- Parking lot.
- Garage.
- Service station.
- Guarded or protected area under Police control or mandatory chain up area.

Steps for Hanging Iron

Protect yourself and others by reducing risk.

Step One

Find the best location possible. Sometimes this is may not be an option due to circumstances. Mitigate the hazards!

Be prepared to travel in snow!!!

Step Two

If you are in an unguarded location, take all available precautions to warn others of your situation!
(Flashing light, warning triangle, etc.)

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Important Note: Protect your hands and toes! Make sure your parking brake is set before working around your tires. We've received word from an emergency worker that crushed fingers and feet are not an uncommon result of applying snow chains--due to cars unexpectedly rolling a few inches at the wrong moment. As an extra precaution, you also might consider placing blocks under the downhill side of a couple of tires.

Step 1: Pull out the chains

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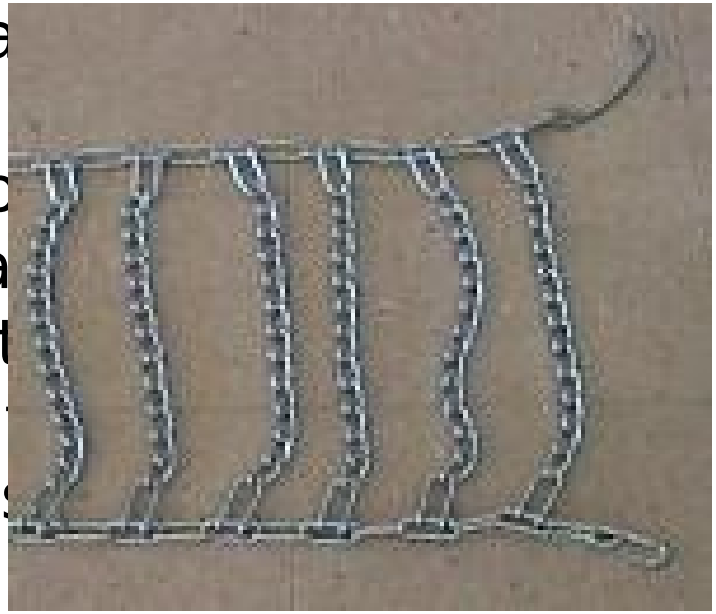
There are several different kinds of snow chains for your car. Most are made of stainless steel links. Newer models use cables instead of chain-links, and they may be studded or corrugated to increase traction on the road. For the purposes of this tutorial, the name for this tool will be "chains," but the same principles should a
most makes.
In the box of tire chains, you sho
find two sets of chains or ca
depending on the make, and t
rubber loops with hooks a
Each chain set look
ladder, with a
mechanism at the end of
each long strand



Step 2: Lay 'em on the line

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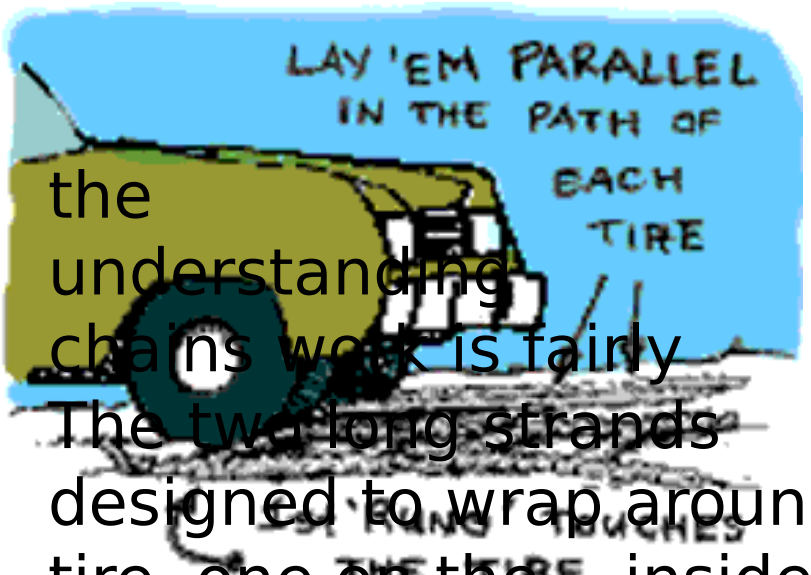

Once you've figured out the ladder analogy, the understanding how snow chains work is fairly simple. The two long strands are designed to wrap around the tire, one on the inside of the tire and the other parallel to it along the outside. The rungs of the ladder, as it were, cross over the tire tread. This ingenious design somehow manages to give your tires support and traction over slippery, soft snow.

Step 2: Lay 'em on the line

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- **Determine whether the car is front or rear wheel drive.** (Do the front wheels propel the car, or do the rear ones?) You want the chains hooked up to the tires which are doing all the work. If you're on an incline then prepare to let the tires roll downhill onto the chains.
- **Rear wheel drive:** Clear a path in the snow about five feet long in front of the tires. If you have rear-wheel drive you're lucky: the front wheels should have already cleared a path for you. Lay the chains out underneath the car, with the first rung laid against the tire where it meets the ground. If you have cables with studs or some other form of corrugation on them, make sure these are lying face down on the ground.
- **Front-wheel drive:** If you have front-wheel drive, or need to back up your rear-wheeler, then clear a path by stomping down on the snow, shoveling, or driving your car back and forth (if the road conditions allow the last option). Again, lay the chains in the path of each tire. The rung closest to the tire should be wedged up against it. The long strands should

Step 2: Lay 'em on the line

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The flat surface of the cross chains should be against the tire sidewall when installed. Make sure that the side chains are straight and not

Notice that there are 2 different clips/hooks

at one end of both side chains.

UNCLASSIFIED

Step 3: Drive-up

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In this step you'll drive partway onto the chains, check their alignment, and continue driving to put the tires into their final position on the chains.

- **Get in the car, or let a partner do it if you're not alone.** Slowly drive the car onto the chains. Stop when you've driven two feet onto them.
- **Make sure each tire is sitting squarely on its chain.** The strands should overlap both sides of the tire equally. Check both tires on this point.

The straight and the crooked: If one or both of the chains are crooked, pull the chains straight into the path of the tire. Make sure each side is parallel. Then pull up the car and stop when the tires are directly on top of the rungs.

Step 3: Drive-up

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An alternative to driving onto the chains.

In some instances, it may be difficult or impractical to clear a path in the snow. If so, try draping the chains over the tires.

Lay the chain on the tire as it is supposed to fit (rungs across the tread, strands on outside and inside of tire), then align the remainder behind the wheel. Get as much of the chain on the tire as possible. Pull forward about two feet, not far enough for the other end of the chain to slide off. (You can also use this method in reverse gear.)

Make sure the chains are still aligned properly on the tires, and that the ends of the chains are in a good position for you to connect them.

Now proceed to Step 4.

Step 4: Hook 'em up

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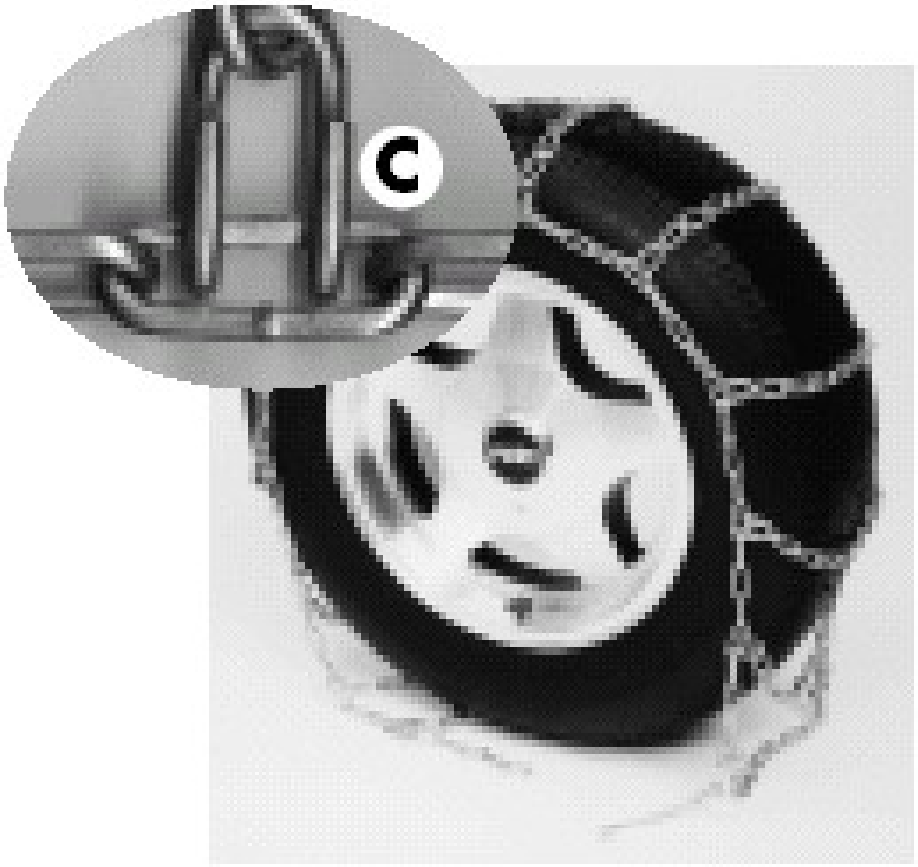

Now comes the fun part. Reach down and take hold of the longest ends of the chains. Drape them over the tire so that the long strands hang down evenly, one end along the inside (axle side) of the tire and the other end hanging along the outer rim of the tire.

Step 4: Hook 'em up

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- **Take a look at the closing mechanism.** Again, different models may work differently, but most operate as a hook or a clip which holds the ends of the chains together. Most mechanisms fit through an open link on the other end of the same strand. Then they're closed shut to hold the strands fast.
- **The hook-up:** Hook the mechanism into an open link which will make the strand into a nice, tight circle. It is important to make the strands as snug as possible, but allow yourself a link or two of slack if it means easier closure. We'll take up the slack in the next step.
- **Inside, then outside:** Hook the inside strand first. Then hook the outer strand. Then move to the other side of the car and repeat the process.

Step 4: Hook 'em up

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- **Inside, then outside:** Hook the inside strand first. Then hook the outer strand. Then move to the other side of the car and repeat the process.

The fixed hook will be installed on the inside side of the tire.

The long, moveable clip will be on the outside side of the tire.

Step 5: Clip them down

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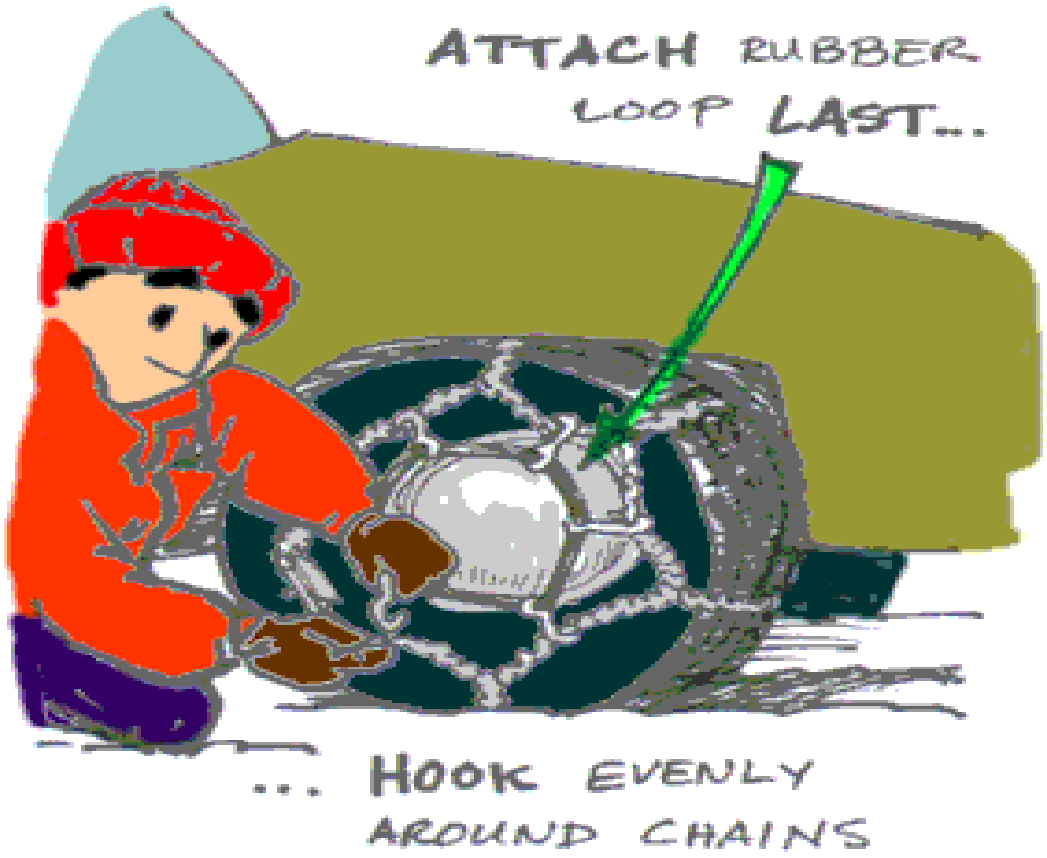
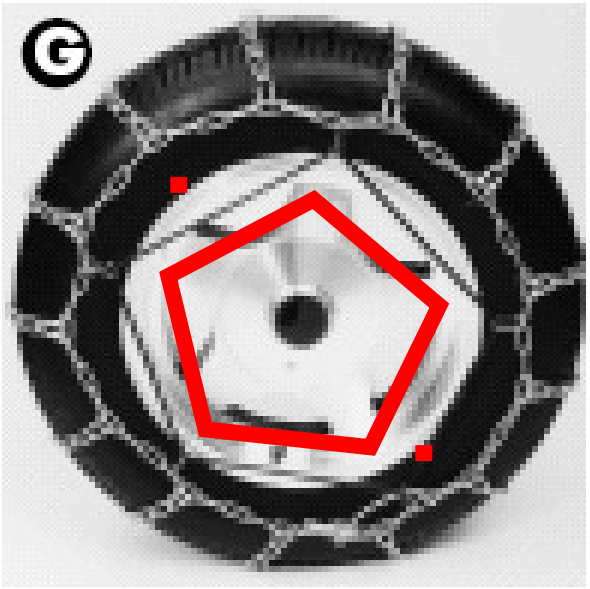


Now take up those rubber loops with the hooks attached (remember those funny-looking things?)

These will help hold the chains snug against the tire.

Step 5: Clip them down



Attach one hook onto a roughly

ween two

tach a hook directly
e hubcap on the opposite
that strand. Work your
around the tire in this manner
until all hooks are attached to the strand at roughly equal intervals. Don't worry that it's not altogether straight at this point. When you start rolling the chains will distribute themselves evenly.

Attach the other rubber loop. Attach it to the chains on the opposite tire just as you did before

Step 6: Start out slow...

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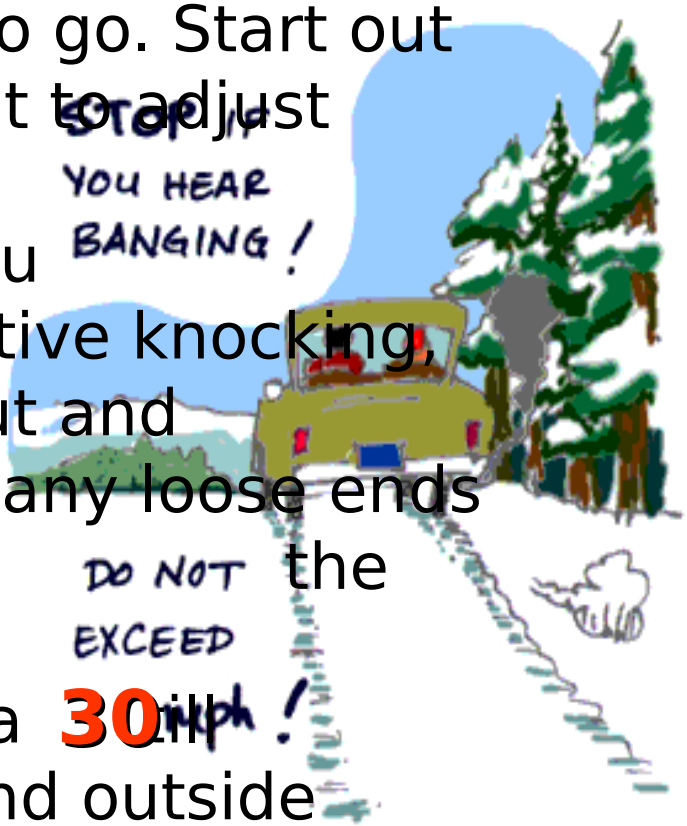
Get back in the car and warm yourself up. You did it! Assuming you followed all the directions above (in order) you now have snow chains on your car and are ready to go. Start out slowly to give the chains a moment to adjust themselves evenly on your tires.

Listen carefully as you go. If you hear any banging or repetitive knocking, stop the car. Get out and investigate any loose ends which could be banging the underbody of the car. Check the clips and make sure the chains a still attached at both inside and outside strands.



Step 6: Start out slow...

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When everything checks out, proceed cautiously. If you've bothered to install chains in the first place, you're admitting that the driving conditions are hazardous. Never exceed 30 miles per hour when drivin
yourself at
twice the distance
as usual between you
car and the
of

avoid making
sudden movements.

Step 7: Remove the chains

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When the road becomes clear of snow, ice, sand, etc., pull over and remove the chains. Do not drive with chains on pavement. The steps are the same as above, but in reverse order.

Step 7: Remove the chains

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- Pick a spot where other cars can see and avoid you.
- Apply the parking brake!
- Unclip the rubber loops.
- Unhook the inside and outside chains. Pick the chains off the tire and lay straight out on the ground.
- Drive four or five feet, until the tires are completely off the chains.
- Put chains and rubber loops back in their box. Be careful where you put them down. They're probably wet and could rust, or damage fabrics.
- Happy motoring! Drive away carefully and be

FAQ's for Safe Tire Chains Use

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1 I drive a 4 x 4. Do I need chains?

You are required by law to carry chains on most Alpine roads. In practice, the police are sometimes lenient with 4 x 4s, but we know from experience that they do usually enforce the law. If you haven't got chains you'll be sent back down the mountain, hoping desperately that you'll find a shop which is (a) open and (b) stocks the chains you need. Best to take them with you! Even if it's not snowing on your way up to the resort, it may be a completely different story when you come to leave. You'll appreciate the security that chains offer when you get to the steep bits!

FAQ's for Safe Tire Chains Use

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2 How easy are they to fit?

Cable chains are much easier to fit than you might think. In fact, very easy to fit, so don't be misled by anything you read to the contrary! The cheaper chains need more effort, but not much more time. Some types have a cable which needs to be joined together before it is pushed over the top of the wheel. This is not easy if there is limited clearance between the top of the wheel and the wheel arch.

Despite the simplicity, there's no substitute for doing a dry run, bearing in mind that you might otherwise have to learn the process in the dark and cold and in the company of the locals who will fit theirs in 60 seconds flat and disappear into the blizzard!

FAQ’s for Safe Tire Chains Use

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3 Some manufacturers advertise 'self tensioning' devices. What are they?

Self tensioners save the hassle of having to get out of the car after half a mile or so and give the tensioning chain a further pull just to check that everything's tight. Neat as these devices are in show room conditions, it's possible that water from melted ice and snow will run back down the wires into the tensioners and refreeze - so you may find it very difficult to remove your chains when you get back to bare road. For this reason we suggest that you don't use them.

FAQ’s for Safe Tire Chains Use

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4 There's a 'No fit' designation for my car / tire size. Why, and what do I do now?

It's easy to find a chain that will fit round your wheel, but what happens when the car is packed full on a bumpy road? There are many vulnerable components, including suspension struts, brake pipes and wheel arches. If there is a 'No fit' designation there ***is*** a good reason.

FAQ's for Safe Tire Chains Use

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5 What makes a good chain?

Chains need to be strong and have an optimum link size and chain pattern. They should be a minimum 4mm chain for car chains and case harden to 15% of chain thickness. Chain grip is a function of the 'pitch' of the chain - a relationship between the length and width of each link - as well as the chain pattern.

FAQ’s for Safe Tire Chains Use

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6 What do these tire sizes actually refer to?
Take 195/60-14 as an example. 195 is the tire width in mm. 60 is the distance from the rim to the top of the tread (the tire 'wall') in mm. 14 is the 'rim size' in inches (a complicated measurement).

FAQ's for Safe Tire Chains Use

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7 How fast can I drive?

The German Federal Motor Vehicle Agency regulation is a maximum 50 km/h,(30 mph) which will certainly seem fast if you are driving on roads where snow chains need to be used.

RULES FOR TIRE CHAIN SAFETY

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1. Pre-fit chains prior to actual use.
2. Consult owner's manual to see if chains can be used on your vehicle.
3. Make sure chains are properly sized for your tire.
4. Follow directions for installing tire chains. Apply as tightly as possible by hand for maximum chain life.
5. Be sure to pull off-highway to safe place before installing, servicing, or removing tire chains.
6. Do not deflate tires to install tire chains. (Tires should be normal inflation.)

RULES FOR TIRE CHAIN SAFETY

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7. Drive approximately 1/4 mile. Stop and retighten. Extra links (depending on chain style) may be cut off, or preferably, retained on the fastener arm. Keep chains tight to snug throughout the operation. Only after retightening may rubber adjusters be applied. DO NOT USE ADJUSTERS ON "ALL CABLE-TYPE" CHAINS.

8. Do not exceed 30 miles per hour. Accelerate and decelerate slowly. Avoid spinning or locking of wheels.

9. If a cross-chain should fail, stop immediately. Repair or remove. DO NOT DRIVE WITH A BROKEN CHAIN.

10. Avoid hitting curbs with tire chains.

SIPING

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Siping

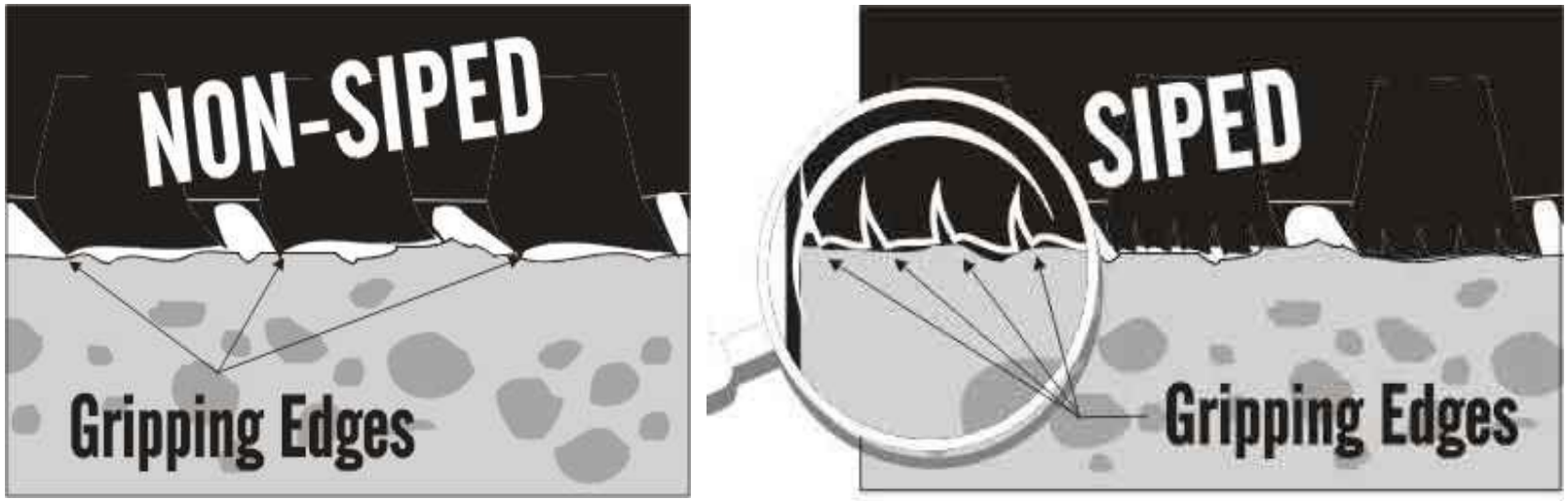
Looking to improve your traction on snow, ice or in wet weather? Consider tire siping - a process that cuts tiny slits across the tread of tires.

- Siping can be performed on new tires or on used tires with at least 50% of the original tread left.

- Siping machine cuts thousands of slits across face of the tire tread.
- These slits create of sharp edges to traction in poor

thousands provide extra

SIPING

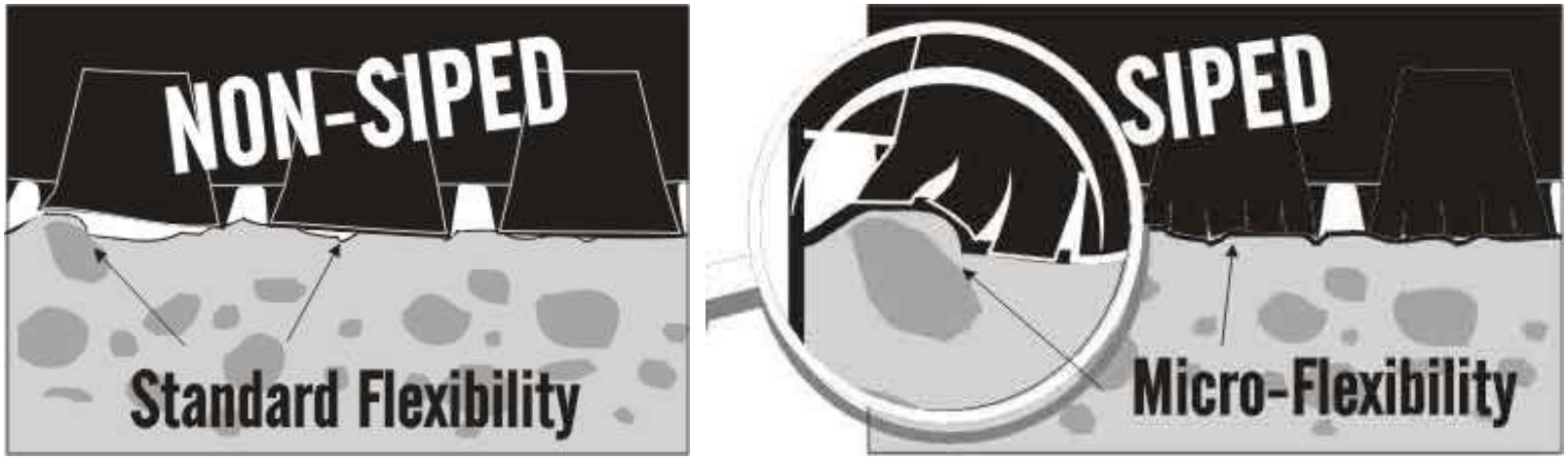


Research has shown that the most effective **braking** power occurs immediately prior to losing traction. Siping extends the window allowed for maximum braking power by giving the existing tread a helping hand. In the examples above notice how the SIPED tire has dozens more gripping edges. These micro edges reduce the distance needed for braking on wet and icy roads

SIPING

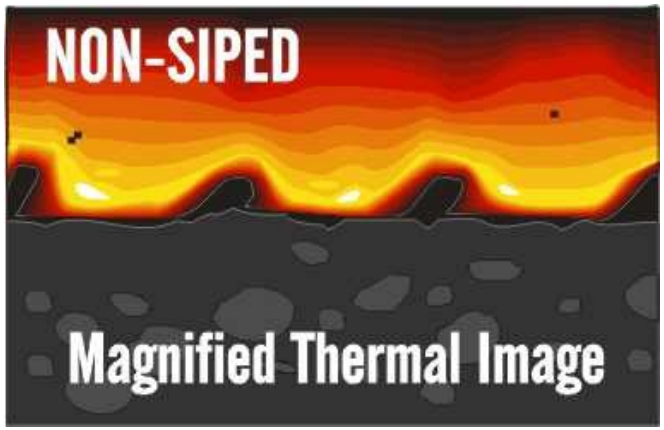
The tread surface on your tire is made up of many smaller surfaces know as "Tread Blocks". The reason for so many surfaces is especially important when it comes to icy or wet road conditions. The Tread Blocks get their gripping power not from their many smooth surfaces but from the even more numerous sharp surrounding edges. SIPING improves the job started by your tire manufacturer by providing more of these gripping edges.

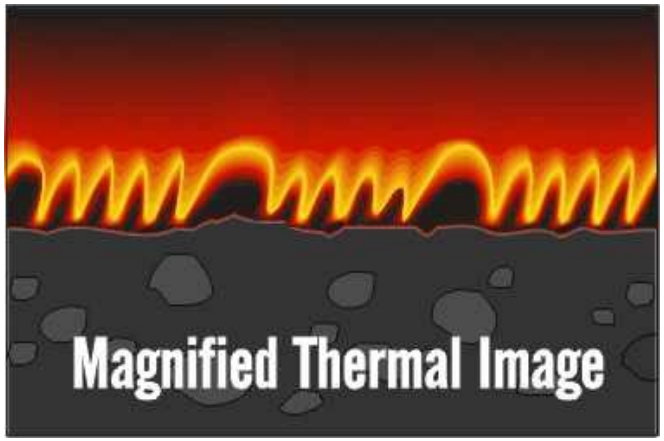
SIPING



New asphalt is relatively smooth but, time and wear exaggerates the coarse texture of the roads surface causing your tires to absorb most of the impact. SIPING gives your tires a Micro-Flexibility reducing the wear on your tires carcass and sidewalls. This effect not only increases tire life but will result in a smoother ride.

SIPING





Heat generation is a common cause of rapid tire wear and even tire failure. While this heat may be a natural result of friction the effect it has on your tire can be undesirable.

SIPING reduces the heat and its effect on your tire by allowing it to cool. As depicted in the illustrations above the SIPED tire runs cooler due to the heat dispersing effect of the SIPES themselves. Much like your cars radiator, heat is isolated into smaller groups and air passing between these areas cause a

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Siping

- The slits are very thin. Resulting in no loss of rubber on the tread face.

- The results are similar in performance to studding your tires.

- Siping improves the traction of all-season or multipurpose tires.

With siping, you will enjoy *improved braking* and *acceleration*, *extended tire life* and a *softer ride*.

Be sure to check your local regulations to see if they are allowed. Siping does not take the place of tire chains! *Also, some tire manufacturers may invalidate warranties if tires are siped.*

For More Information

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Contact your Local BSB/ASG Safety Office

Or

Your Divisional Safety Office

Or

The US Army – Europe Safety Office

Please visit our website at:

US Army Europe Safety Office